

2021
M.Sc.
First Semester
CORE – 01
GEOLOGY

Course Code: MGLC 1.11
(Mineralogy, Crystallography & Analytical Techniques)

Total Mark: 70

Pass Mark: 28

Time: 3 hours

Answer five questions, taking one from each unit.

UNIT-I

1. Explain silicate structure and describe the structural classification of silicates. 14
2. Explain the following: 7×2=14
 - (a) Coordination number
 - (b) Polymorphism

UNIT-II

3. Explain the systematic mineralogy of amphibole minerals. 14
4. Write notes on the following: 7×2=14
 - (a) Beryl minerals
 - (b) Mica minerals

UNIT-III

5. Discuss the systematic mineralogy of Feldspar minerals. 14
6. Write notes on the following: 7×2=14
 - (a) Oxide minerals
 - (b) Carbonate group of minerals

UNIT-IV

7. What is twinning in crystal? Differentiate between contact twins and

penetration twins and explain the different types of twin laws of monoclinic system. 4+10=14

8. Explain in detail the difference between uniaxial and biaxial minerals with special reference to their optical indicatrix. 14

UNIT-V

9. Write the principles of electron probe microanalysis and explain its mechanism. 14
10. Explain the principles of atomic absorption spectrophotometer and its application in geology. 14
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